

# AI Planning

## Exercise Sheet 6

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### Exercise 6.1

### Exercise 6.2

$\Pi = \langle A, I, O, \gamma \rangle$  with

$A = \{a, b, c, d\}$

$I = \{a \mapsto 0, b \mapsto 0, c \mapsto 0, d \mapsto 0\}$

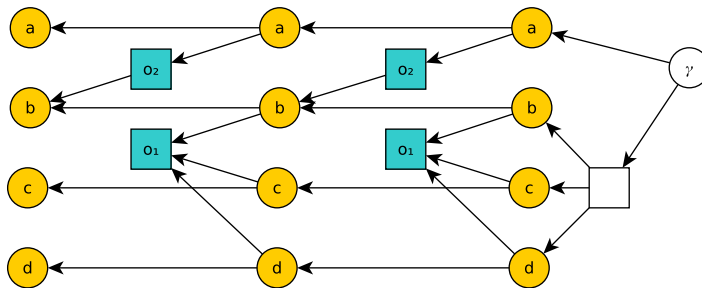
$\gamma = a \vee (b \wedge c \wedge d)$

$O = \{o_1, o_2\}$

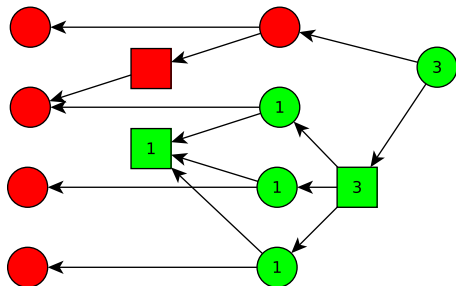
$o_1 = \langle \top, b \wedge c \wedge d \rangle$

$o_2 = \langle b, a \rangle$

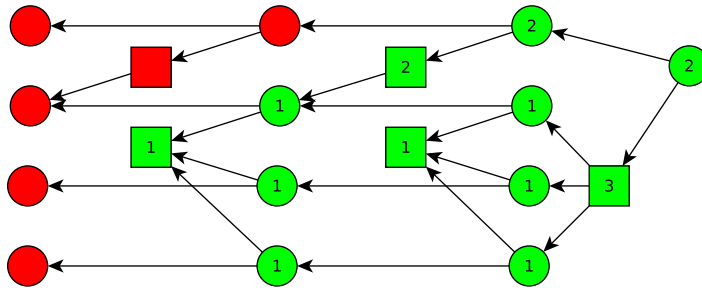
Relaxed planning graph with depth 3. (Sparse labeling due to technical restrictions.)



Depth 2,  $h_{add}(I) = 3$

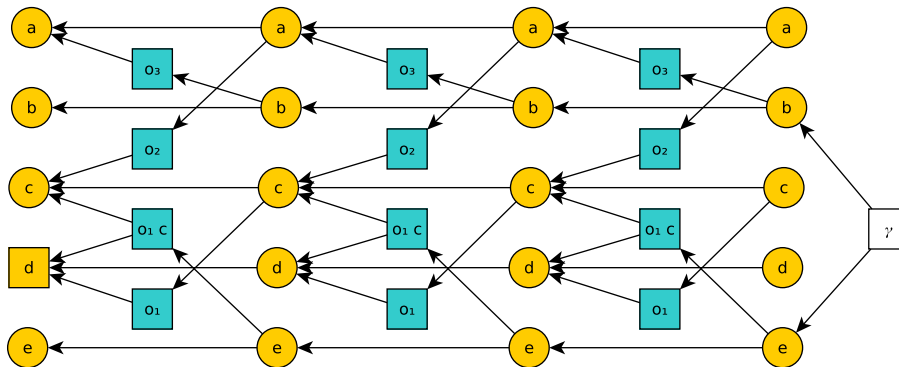


Depth 3,  $h_{add}(I) = 2$

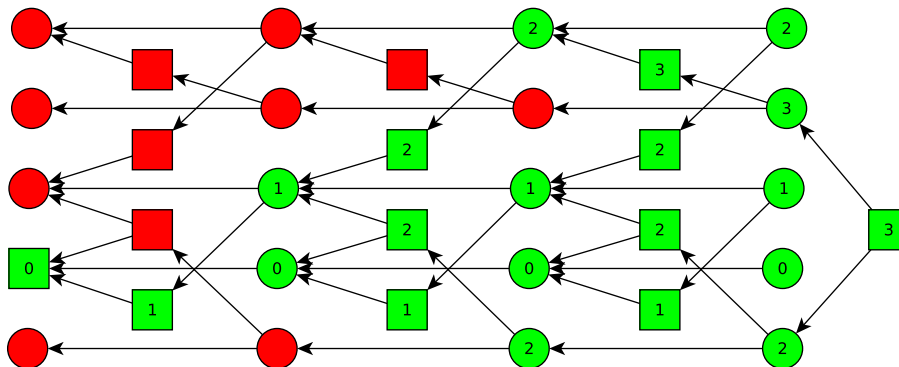


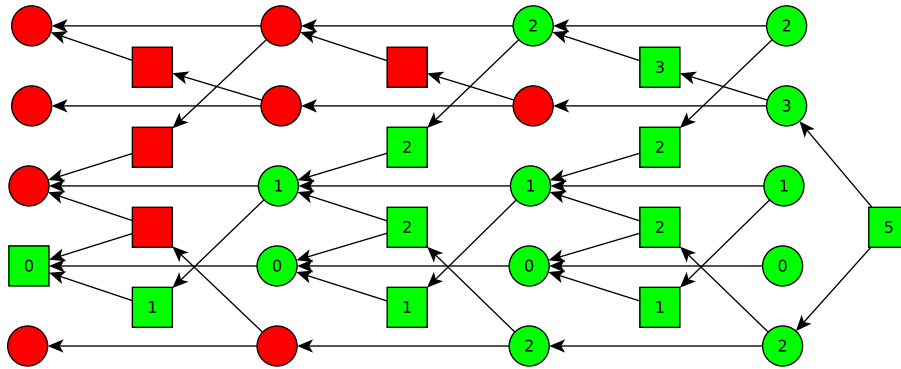
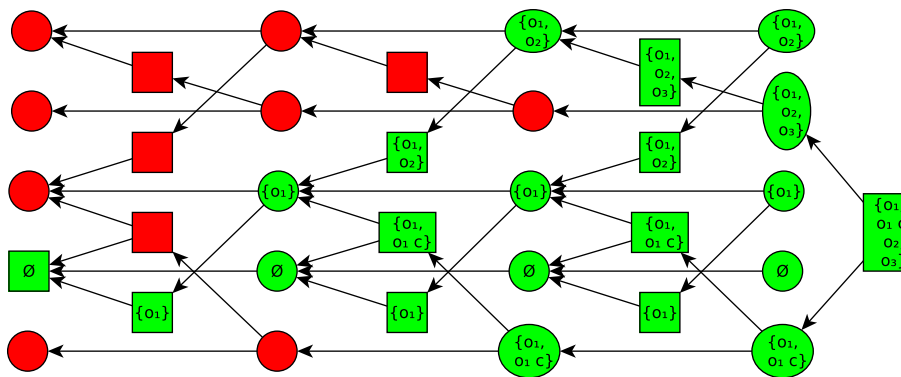
### Exercise 6.3

Relaxed planning graph with depth 3. (Sparse labeling due to technical restrictions.)



(a)  $h_{max}(s) = 3$



(b)  $h_{add}(s) = 5$ (c)  $h_{sa}(s) = 4$ (d)  $h_{FF}(s) = 4$ 